

EXPLORATORY RESEARCH RELATED TO THE 1999 EARTHQUAKES IN TURKEY AND TAIWAN

Program Solicitation

NSF 00-32

DIRECTORATE FOR ENGINEERING
DIVISION OF CIVIL AND MECHANICAL SYSTEMS

DEADLINE DATE: APRIL 4, 2000, 5:00 PM (your local time)



NATIONAL SCIENCE FOUNDATION



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SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Name: Exploratory Research Related to the 1999 Earthquakes in Turkey and Taiwan

Short Description/Synopsis of Program:

The recent earthquakes in Turkey and Taiwan offer unique research opportunities to advance the state of knowledge and the state of practice in earthquake engineering. The significant increase in large magnitude ground motion recordings, the fault rupture from two different types of faulting in urban areas, and the consequences of the strong ground shaking including massive structural failures/collapses, landsliding, liquefaction, make these earthquakes particularly significant. Recognizing this unique opportunity, Division of Civil and Mechanical Systems (CMS) of the Directorate for Engineering (ENG) of the National Science Foundation announces an opportunity for exploratory research related to these two recent major urban earthquakes in Turkey and Taiwan.

The goals of this research opportunity are the capture of time-sensitive data and field information, records of constructed facility performance and institutional response, and collaborative exploratory research. This research opportunity will also result in the establishment of enhanced working relationships with colleagues in Turkey and Taiwan. These collaborations may be continued into more extensive research efforts of longer duration that may be submitted for the regular April 1/October 1 target deadlines for unsolicited proposals to the CMS Division.

Cognizant program Officer(s):

Dr. Clifford Astill, Program Director, Division of Civil and Mechanical Systems, telephone (703) 306-1361. e-mail: castill@nsf.gov.

Dr. William Chang, Program Director for Taiwan, China, Mongolia and Southeast Asia, Division of International Programs, telephone: (703) 306-1704. e-mail: wychang@nsf.gov

Dr. Alison Flatau, Program Director, Division of Civil and Mechanical Systems, telephone (703) 306-1361. e-mail: aflatau@nsf.gov.

Dr. Vijaya Gopu, Program Director, Division of Civil and Mechanical Systems, telephone (703) 306-1361. e-mail: vgopu@nsf.gov.

Dr. Shih-Chi Liu, Program Director, Division of Civil and Mechanical Systems, telephone (703) 306-1361. e-mail: sliu@nsf.gov.

Dr. John Scalzi, Program Director, Division of Civil and Mechanical Systems, (703) 306-1361. e-mail: jscalzi@nsf.gov.

Dr. Osman Shinaishin, Program Director for North Africa, Near East and South Asia, Division of International Programs, telephone: (703) 306-1707. e-mail: oshinais@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) No.: 47.041 — Engineering Grants

ELIGIBILITY INFORMATION

- ♦ Limitation on the categories of organizations that are eligible to submit proposals:

Proposals may be submitted by U.S. universities and colleges in support of individual investigators or small groups.

- ◆ PI eligibility limitations: **None**
- ◆ Limitation on the number of proposals that may be submitted by an organization: **None**

AWARD INFORMATION

- ◆ Type of Award Anticipated: **Standard Grant**
- ◆ Number of awards anticipated in FY 00: **approximately 20 awards**
- ◆ Amount of funds available: **Up to \$1.5 million in FY 2000**
- ◆ Anticipated date of award: **June 2000**
- ◆ Duration of awards: **Up to 12 months**

PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

- ◆ **Proposal Preparation Instructions**
 - Letter of Intent requirements: **None**
 - Preproposal requirements: **None**
 - Proposal preparation instructions: **Standard NSF Grant Proposal Guide instructions**
 - Supplemental proposal preparation instructions: **None**
 - Deviations from standard (GPG) proposal preparation instructions: **None**
- ◆ **Budgetary Information**
 - Cost sharing/matching requirements: **None**
 - Indirect cost (F&A) limitations: **None**
 - Other budgetary limitations: **Award amounts up to \$75,000 for proposals submitted in response to this solicitation.**
- ◆ **FastLane Requirements**
 - FastLane proposal preparation requirements: **FastLane use required**
 - FastLane points of contact: **Ms. Janie Harris, Division of Civil and Mechanical Systems, (703) 306-1360, jvharris@nsf.gov; FastLane Help Desk, (703) 306-1142, fastlane@nsf.gov.**

♦ **Deadline/Target Dates**

- Full Proposal Deadline **5:00 PM local time, April 4, 2000 (FastLane)**

PROPOSAL REVIEW INFORMATION

- ♦ Merit Review Criteria: **Standard National Science Board approved criteria and specific criteria for this program**

AWARD ADMINISTRATION INFORMATION

- ♦ Grant Award Conditions: **GC-1 or FDP III**
- ♦ Special grant conditions anticipated: **Requirement for web-based dissemination of data and research outcomes.**
- ♦ Special reporting requirements anticipated: **None**

I. INTRODUCTION

The recent earthquakes in Turkey and Taiwan offer unique research opportunities to advance the state of knowledge and the state of practice in earthquake engineering. The significant increase in large magnitude ground motion recordings, the fault rupture from two different types of faulting in urban areas, and the consequences of the strong ground shaking including massive structural failures/collapses, landsliding, liquefaction, make these earthquakes particularly significant. Recognizing this unique opportunity, the Division of Civil and Mechanical Systems (CMS) of the Directorate for Engineering (ENG) of the National Science Foundation announces an opportunity for exploratory research related to these two recent major urban earthquakes in Turkey and Taiwan.

In considering the possibility for this research opportunity, NSF funded a workshop held October 25 and 26, 1999 by the Earthquake Engineering Research Institute (EERI). The report of the outcomes of this workshop is on the web at <http://www.eeri.org>. In addition, reconnaissance reports for the earthquakes in Turkey and Taiwan are available at <http://rccg03.usc.edu/> and proposers are encouraged to consult these documents when considering proposed research projects.

II. PROGRAM DESCRIPTION

The goals of this research opportunity are the capture of time-sensitive data and field information, records of constructed facility performance and institutional response, and collaborative exploratory research. This research opportunity will also result in the establishment of enhanced working relationships with colleagues in Turkey and Taiwan. These collaborations may be continued into more extensive research efforts of longer duration that may be submitted for the regular April 1/October 1 target deadlines for unsolicited proposals to the CMS Division.

Research funded under this opportunity is expected to be mutually beneficial for the U. S. and the collaborating country, Turkey or Taiwan. It is desirable that research in this opportunity be implemented as a coordinated effort between the U.S. and Turkey or Taiwan, so that proposers are encouraged to include interactions with in-country researchers as integral to the research goals. Awareness of relevant projects planned or underway in Turkey or Taiwan is important and, where appropriate, in-country research team(s) should be identified in the proposal and the nature of any planned collaboration should be explained. Joint research involving data acquisition, field studies, the sharing of facilities, and the joint design of experiments, etc., is particularly encouraged where appropriate.

Proposals should include a commitment to making data and observations available on the World Wide Web, and especially to researchers in the participating countries, and this requirement will be made a condition of award. As a general policy, NSF will require that principal investigators plan for web-based dissemination to make available data, derived data products, samples, physical collections, and other supported materials derived from NSF-supported research. NSF expects investigators to share such information with other researchers at no or minimum cost and within a reasonable time.

A grantees meeting will be arranged near the end of the funding period to discuss results, and proposals should include funds for such a trip.

III. ELIGIBILITY

Proposals submitted to this opportunity will be accepted from U.S. colleges and universities only in support of individual investigators or small groups. Participation in the proposed research by other U.S. organizations must be in the form of a subaward.

IV. AWARD INFORMATION

Depending on the availability of funds, approximately \$1.5 million will be available to support up to 20 projects under this initiative in FY 2000. Projects should be framed for up to a 12-month duration, and budgets up to \$75,000 may be requested. The anticipated date of award is June 2000.

For projects that are awarded, NSF program staff will assist the PIs to develop effective in-country collaborations that further enhance the ability of the research to contribute to the goals of this exploratory research opportunity, including utilizing the experience and resources of the program staff in the NSF Division of International Programs.

V. PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions.

Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *Grant Proposal Guide* (GPG), NSF 00-2. The complete text of the GPG (including electronic forms) is available electronically on the NSF Web site at: <<http://www.nsf.gov/>>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone 301.947.2722 or by e-mail from pubs@nsf.gov.

Proposers are reminded to identify the program solicitation number (NSF 00-32) in the program announcement/solicitation block on the NSF Form 1207, "*Cover Sheet for Proposal to the National Science Foundation*." Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information.

Travel and in-country expenses to support appropriate U.S. participation in data acquisition and field and laboratory research, including travel and per diem, may be included in the requested budget. Funding for direct support of in-country researchers may not be included.

C. Proposal Due Dates.

The proposal **MUST** be submitted electronically via FastLane by 5:00 PM, local time, April 4, 2000.

A proposal may not be processed until the complete proposal (including the signed Cover Sheet) has been received by NSF. A proposal is considered complete when the proposal, including the Project Description, has been submitted to NSF. The receipt date will be the date the sponsored projects office transmits the proposal to NSF.

Submission of Signed Cover Sheets. The signed copy of the proposal Cover Sheet (NSF Form 1207) must be postmarked (or contain a legible proof of mailing date assigned by the carrier) within five working days following proposal submission and be forwarded to the following address:

NSF 00-32
National Science Foundation
DIS-FastLane Cover Sheet
4201 Wilson Blvd.
Arlington, VA 22230

D. FastLane Requirements.

Proposers are required to prepare and submit all proposals for this program solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: <https://www.fastlane.nsf.gov/a1/newstan.htm>.

Submission of Signed Cover Sheets. The signed copy of the proposal Cover Sheet (NSF Form 1207) must be postmarked (or contain a legible proof of mailing date assigned by the carrier) within five working days following proposal submission in accordance with the FastLane proposal preparation and submission instructions referenced above.

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process.

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions or adjacent disciplines to that principally addressed in the proposal.

Proposals will be reviewed against the following general merit review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

PIs should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give these factors careful consideration in making funding decisions.

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions provide

abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learner perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- are essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

B. Additional Review Criteria.

In addition to the standard NSF review criteria, special consideration will be given to in-country collaboration, to the extent that it enhances the overall research project. The potential enhancement that in-country collaboration makes to a research project is a function of both the type of research proposed, and the effectiveness of the collaboration, and these will be judged as part of the review process. Investigators are encouraged to include in-country collaboration as an integral component of the research proposed.

C. Review Protocol and Associated Customer Service Standard.

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this solicitation will be reviewed by panels.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. A summary rating and accompanying narrative will be completed and signed by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are mailed to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding. A program officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation. In most cases, proposers will be contacted by the program officer after his or her recommendation to award or decline funding has been approved by his or her supervisor, the division director. This informal notification is not a guarantee of an eventual award. NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. The interval ends when the division director accepts the program officer's recommendation.

In all cases, after final programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with an NSF program officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants Officer does so at its own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award.

Notification of the award is made *to the submitting organization* by a Grants Officer in the Division of Grants and Agreements (DGA). Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided to the Principal Investigator.

B. Grant Award Conditions.

An NSF grant consists of: (1) the award letter, which includes any special provisions applicable to the grant and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable grant conditions, such as Grant General Conditions (NSF GC-1)* or Federal Demonstration Partnership Phase III (FDP) Terms and Conditions* and (5) any NSF brochure, program guide, announcement or other NSF issuance that may be incorporated by reference in the award letter. Electronic mail notification is the preferred way to transmit NSF grants to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

* These documents may be accessed electronically on NSF's Web site at: <<http://www.nsf.gov/>>. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone 301.947.2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, (NSF 95-26) available electronically on the NSF Web site. The GPM also is available in paper copy by subscription from the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The GPM may be ordered through the GPO Web site at: <<http://www.gpo.gov/>>. The telephone number at GPO for subscription information is 202.512.1800.

C. Special Grant Conditions.

NSF will require that principal investigators plan for web-based dissemination to make available data, derived data products, samples, physical collections, and other supported materials derived from NSF-supported research. NSF expects investigators to share such information with other researchers at no or minimum cost and within a reasonable time.

D. Reporting Requirements.

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after expiration of a grant, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented a new electronic project reporting system, available through FastLane, which permits electronic submission and updating of project reports, including information on: project participants (individual and organizational); activities and findings; publications; and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries should be made to the following contact persons:

Dr. Clifford Astill, Program Director, Division of Civil and Mechanical Systems, telephone (703) 306-1361. e-mail: castill@nsf.gov.

Dr. William Chang, Program Director for Taiwan, China, Mongolia and Southeast Asia, Division of International Programs, telephone: (703) 306-1704. e-mail: wychang@nsf.gov

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Dr. Osman Shinaishin, Program Director for North Africa, Near East and South Asia, Division of International Programs, telephone: (703) 306-1707. e-mail: oshinais@nsf.gov.

For questions related to use of FastLane, contact Ms. Janie Harris, Division of Civil and Mechanical Systems, (703) 306-1360, e-mail: jvharris@nsf.gov; FastLane help Desk, (703) 306-1142, fastlane@nsf.gov.

IX. OTHER PROGRAMS OF INTEREST

The NSF Guide to Programs is a compilation of funding for research and education in science, mathematics, and engineering. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter. Many NSF programs offer announcements concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices listed in Appendix A of the GPG. Any changes in NSF's fiscal year programs occurring after press time for the Guide to Programs will be announced in the NSF Bulletin, available monthly (except July and August), and in individual program announcements. The Bulletin is available electronically via the NSF Web Site at <http://www.nsf.gov>. The direct URL for recent issues of the Bulletin is <http://www.nsf.gov/od/lpa/news/publicat/bulletin/bulletin.htm>. Subscribers can also sign up for NSF's Custom News Service to find out what funding opportunities are available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Grantees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities, and persons with disabilities to compete fully in its programs. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to

work on NSF-supported projects. See the program announcement or contact the program coordinator at (703) 306-1636.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation regarding NSF programs, employment, or general information. TDD may be accessed at (703) 306-0090 or through FIRS on 1-800-877-8339.

The National Science Foundation is committed to making all of the information we publish easy to understand. If you have a suggestion about to improve the clarity of this document or other NSF-published materials, please contact us at plainlanguage@nsf.gov.

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer; Information Dissemination Branch, Division of Administrative Services; National Science Foundation; Arlington, VA 22230, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk officer for National Science Foundation (3145-0058), 725 – 17th Street, N.W. Room 10235, Washington, D.C. 20503.

YEAR 2000 REMINDER

In accordance with Important Notice No. 120 dated June 27, 1997, Subject: Year 2000 Computer Problem, NSF awardees are reminded of their responsibility to take appropriate actions to ensure that the NSF activity being supported is not adversely affected by the Year 2000 problem. Potentially affected items include: computer systems, databases, and equipment. The National Science Foundation should be notified if an awardee concludes that the Year 2000 will have a significant impact on its ability to carry out an NSF funded activity. Information concerning Year 2000 activities can be found on the NSF web site at <http://www.nsf.gov/oirm/y2k/start.htm>.

Catalogue of Federal Domestic Assistance (CFDA) No.: 47.041 – Engineering Grants

OMB No.: 3145-0058
NSF 00-32